

Title (en)

Solid state power amplifier with dynamically adjusted operating point

Title (de)

Festkörperleistungsverstärker mit dynamisch verstellbarem Arbeitspunkt

Title (fr)

Amplificateur de puissance à l'état solide avec ajustage dynamique du point de fonctionnement

Publication

EP 0473299 B1 19960110 (EN)

Application

EP 91307201 A 19910806

Priority

US 57486790 A 19900830

Abstract (en)

[origin: EP0473299A2] RF power is sampled and measured at the input and output of a solid state power amplifier using directional couplers (54,55) and matched square law detectors (60,61). Outputs from the detectors are applied to differential inputs of a DC operational amplifier (62). Outputs from the detectors are compared and filtered in the operational amplifier and the resulting difference signal is applied to a control input on a switching type power supply (64). The power supply converts a DC input voltage to the various positive and negative voltages required to operate the RF devices (72-75) in the solid state power amplifier. When the control loop is closed, the supply voltage varies to maintain a constant operating point resulting in constant gain, efficiency, and linearity for the overall solid state power amplifier despite variations in signal levels and signal composition. In another embodiment, the solid state power amplifier has a series of single-ended low power amplifiers terminating in an output high power module. In the output module, one medium power device acts as a driver stage (45) for four high power devices (72-75) connected in parallel. The output stages are hybrid coupled, and isolators before and after these hybrid coupled output stages isolate the driver from the final amplifiers and protect the output devices from reflected signals. A dynamically controlled PIN diode variable attenuator (42) at the amplifier input allows the operating point of the amplifier to be selected and adjusted while the closed loop function is in operation. A hybrid matrix power amplifier system is also disclosed. <IMAGE>

IPC 1-7

H03F 1/32; **H03F 1/02**; **H03F 3/60**; **H03F 3/19**

IPC 8 full level

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CPC (source: EP US)

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Citation (examination)

- Information brochure on the Oberheim OB-8 synthesizer, Oberheim Electronics Inc., Los Angeles, US, ca. 1980
- Operation manual and Service Notes for the Roland JP-8 synthesizer, Roland, JP, 1981

Cited by

EP2073383A1; EP1293798A3; EP1756943A4; US5903192A; EP0792014A3; FR2693058A1; EP0583175A1; US5465068A; KR100833832B1; EP0639890A1; EP0901219A3; EP1852971A1; EP1374446A4; EP2582040A3; GB2329087A; EP2296269A3; EP1984978A4; KR20010065135A; FR2798244A1; EP0768752A1; US5751250A; EP0685932A1; FR2720569A1; US8629719B2; US6255885B1; US7917106B2; US7110727B2; US7917105B2; WO2011095214A1; WO2016146195A1; WO0249300A3; WO02084935A1; WO0118956A1; WO2007092794A2; US7933570B2; US7869542B2; US7876853B2; US6799020B1; US6256483B1; US8095090B2; US10347986B2; US7994855B2; US7010266B2; US6839549B2; US9065394B2; US7839213B2; US8032097B2; US8208874B2; WO2007129118A1; WO2008032264A3; WO0106643A1; WO0025445A1

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